

THE LEVEL OF KNOWLEDGE AND READINESS OF TEACHERS TOWARDS THE APPLICATION OF MIND MAPS IN MALAY LANGUAGE LEARNING AND FACILITATING

Nanthini KAJENTHERAN¹

¹Sekolah Jenis Kebangsaan (Tamil) Natesa Pillay

nanthinikajentheran10@gmail.com

Received: 19th September 2023

Accepted: 1st October 2023

ABSTRACT

The application of i-Think map is crucial in building and generating students' critical thinking. However, the student's success in learning depends not only on their cognitive intelligence level. Regarding this, teachers must play an essential role in creating effective teaching and facilitating environments. This environment can be enhanced by providing more effective approaches, methods, and techniques. This study aims to identify teachers' level of knowledge and readiness towards applying i-Think maps in teaching and facilitating Malay language subjects. This study was conducted on eight primary schools in the Lower Perak district. The research sample involved is a group of 24 teachers who teach Malay subjects. For this purpose, this study will use a questionnaire to collect research data. The questionnaire in this study was divided into parts: Part A, B and C. Data was collected and analysed using descriptive statistics using the Statistical Package for Social Sciences (SPSS) software version 28.0. The results of the study found that the level of teachers' knowledge about the application of thought maps in Malay Language teaching and facilitating is moderate ($\mu= 3.42$), and the level of teacher readiness towards the application of thought maps in Malay Language teaching and facilitating is also average ($\mu=3.40$). The information from this study can also be a source of reference for teachers to diversify the mind-map technique across the curriculum and skills. This study aims to improve teachers' knowledge about applying i-Think maps in learning and facilitating the Malay language classroom—a suggestion for future research to involve a sample of school teachers in rural areas.

Keywords: i-Think map; application; learning and facilitating; cognitive; approach

TAHAP PENGETAHUAN DAN KESEDIAAN GURU TERHADAP PENGAPLIKASIAN PETA PEMIKIRAN DALAM PEMBELAJARAN DAN PEMUDAHCARAAN (PDPC) BAHASA MELAYU

ABSTRAK

Pengaplikasian peta pemikiran atau *i-Think* adalah sangat penting untuk membina dan menjana pemikiran kritikal murid. Namun, keberhasilan murid dalam pelajaran tidak hanya bergantung kepada tahap kecerdasan kognitif murid itu sendiri. Dalam hal ini, guru perlu memainkan peranan penting dalam mewujudkan PdPc yang berkesan. Guru harus mengubah pemikiran dan amalan pendekatan PdPc dengan mengaplikasikan pendekatan, kaedah dan teknik PdPc yang lebih efektif. Kajian ini bertujuan untuk mengenal pasti tahap pengetahuan dan kesediaan guru terhadap pengaplikasian peta pemikiran dalam PdPc Bahasa Melayu. Kajian ini dijalankan terhadap lapan buah sekolah rendah di daerah Hilir Perak. Sampel kajian yang terlibat ialah seramai 24 orang guru yang mengajar mata pelajaran Bahasa Melayu. Bagi tujuan ini, kajian ini akan menggunakan soal selidik untuk mengumpulkan data kajian. Soal selidik dalam kajian ini akan dibahagikan kepada tiga bahagian iaitu Bahagian A, B dan C. Data dikumpulkan dan dianalisis menggunakan statistik deskriptif menggunakan perisian *Statistical Package for Social Sciences* (SPSS) versi 28.0. Hasil kajian mendapati tahap pengetahuan guru terhadap pengaplikasian peta pemikiran dalam PdPc Bahasa Melayu adalah sederhana ($\mu= 3.42$) dan tahap kesediaan guru terhadap pengaplikasian peta pemikiran dalam PdPc Bahasa Melayu juga adalah sederhana ($\mu=3.40$). Maklumat kajian ini juga dapat menjadi sumber rujukan kepada warga guru untuk mempelbagaikan teknik peta pemikiran merentas kurikulum dan kemahiran. Implikasi kajian ini berupaya meningkatkan tahap pengetahuan guru terhadap pengaplikasian peta pemikiran dalam PdPc. Kajian lanjutan dicadangkan supaya melibatkan sampel yang terdiri daripada guru-guru di sekolah luar bandar dan sekolah pedalaman.

Kata Kunci: peta pemikiran *i-Think*; pengaplikasian; Pembelajaran dan Pemudahcaraan (PdPc); kognitif; pendekatan

Introduction

Education is an essential aspect for Malaysia to achieve the optimum level of its national development. Students at the primary school level, students at secondary school and public and private higher education institutions are examples of target groups that are the pillar for the government to develop the country. In achieving national progress in the following years, young people must have complete knowledge and skills to compete with other developed countries such as the United States and New Zealand. With that, the Malaysian Ministry of Education (MOE) has undertaken various efforts to improve the education system in Malaysia. To develop a balanced human capital, MOE has emphasised Higher Level Thinking Skills (HTH) in the curriculum regardless of Malay, English, Science or Mathematics subjects. In the Malaysian Education Development Plan (PPPM 2013-225), thinking skills are one of the six main characteristics that need to be nurtured in every student to enable them to compete at the global level in line with the National Education Philosophy (NEP).

The transformation of the education curriculum in PPPM 2013-2025 emphasises the concept of Higher Order Thinking Skills (HOTS), which enables nurturing of a generation with critical and creative thinking. Based on the main characteristics of the PPPM 2013-2025, each student needs to equip themselves with thinking skills, leadership skills, bilingual skills, knowledge, ethics and spirituality, as well as national identity. National Education Transformation through the implementation of the Kurikulum Standard Sekolah Rendah (KSSR), which was introduced in 2011 and the Kurikulum Standard Sekolah Menengah (KSSM) in 2017, is one of the ways to produce critical, creative and innovative students (Sharifah Nor Puteh & Aliza Ali, 2012). Knowledge about HOTS is not new in Malaysia's education system. Programmes that apply thinking skills in teaching across all school curriculum subjects have been

launched since 1994, such as the Programme for International Student Assessment (PISA), a test to evaluate students' thinking skills, especially in Mathematics and Science subjects. However, its implementation at school is still seen as less effective. The proof is that the achievements of students who took the PISA test in 2009 and 2012 show that their thinking skills are still low. In The Organisation for Economic Co-operation and Development Report (OECD) (2012), Malaysia ranks in the lowest third of the world compared to 74 other participating countries. The learning and facilitation process that emphasises students' marks in the exam alone has impacted teachers' teaching patterns that only prioritise memorisation techniques.

HOTS requires learners to do something with the information, facts and ideas received by giving meaning, linking information, categorising, and manipulating it to enable a person to discover new meaning and understanding. HOTS is thinking skills such as synthesis, analysis, reasoning, understanding, application, and evaluation. HOTS is a skill required to solve problems through critical thinking process. Saavedra & Opfer (2012) stated that one of the challenges in the 21st century is to produce students who have high-level thinking skills obtained through meaningful learning that occurs in complex communication. Thus, in learning and facilitating the Malay Language, applying i-Think maps is crucial to build and generate students' critical thinking. This is because the i-Think map has combined the cognitive teaching process and the visual presentation of information in graphic form (Kementerian Pelajaran Malaysia, 2012). Such things can affect thinking skills and be able to diversify the teaching methods implemented so that students are more interested in learning. Therefore, students' thinking skills can help improve mental operation skills, including knowledge, observation and production.

However, the student's success in learning depends not only on the student's cognitive intelligence level. In this regard, teachers must play an essential role in creating effective learning and facilitation. Teachers need to apply elements of creativity that can add value and improve efforts in student learning (Ong et al., 2017). In this context, teachers should change the thinking and practice of the learning and facilitation approach by applying more effective strategies, methods and techniques. However, some teachers are still not skilled in implementing the learning and facilitation process that is meaningful to students. This point coincides with Rohaida Yusop & Zamri Mahamod's (2015) opinion that teachers are not exposed to the appropriate methods and techniques during the classroom's Malay Language learning and facilitation process. Therefore, this study will assess teachers' level of knowledge and readiness towards applying i-Think maps in learning and facilitating the Malay Language. The existing studies on the application of i-Think maps in Malay language learning and facilitation also found that there are some shortcomings. The following section elaborates on the problem statement in terms of the knowledge and willingness of teachers to apply i-Think maps in learning and facilitation of the Malay language to justify the need for this study to be carried out.

Literature Review

Teacher teaching practice covers various aspects, but education in Malaysia that only depends on exams is an issue that needs attention. As stated in the National Education Philosophy (NEP), Malaysian education aims to produce holistic learners in terms of physical, emotional, spiritual, intellectual and social aspects. Still, if the observation is only focused on exams, education in Malaysia may be labelled as an effort of poor quality and cause students to lag behind in education compared to students in other developed countries. The emphasis on exams alone has changed the attitude of teachers who only focus on finishing the syllabus quickly and teaching students how to answer exam questions (Roselizam Daud et al., 2020) and do not focus on students' thinking skills. The study conducted by Rubanathan Paramasveran & Nurfaradilla Mohamad Nasri (2018) states that teachers do not have the mastery to integrate thinking skills in the Malay Language learning and facilitation process. This is because teachers are more focused on achieving teaching objectives and finishing the syllabus, as well as focusing more on exams alone. Furthermore, some teachers consider that students must first master all the facts and concepts of a subject before they can be encouraged to think (Rohaida Yusop & Zamri Mahamod, 2015).

As a result, the old method that is still being maintained causes the objective of the Kurikulum Standard Sekolah Rendah (KSSR) that is currently being carried out not only not to be achieved but also causes the issue of passive students to continue to occur.

A manifestation of the statement, the issue highlighted in this research is the failure of some educators to master the concept and knowledge of mind maps fully. In fact, the uncertainty and lack of information in the practical implementation of i-Think maps has encouraged them to maintain traditional teaching methods compared to graphic thinking tools. This statement is also in line with the observation of Anuar Ahmad & Jinggan (2015) where the traditional approach of chalk and talk is still practiced in the learning and facilitating of the Malay language in today's times to the point of dull students. Next, teachers were also found to be weak in applying thinking map skills in the learning and facilitation process due to a lack of continuous monitoring. This phenomenon can be reviewed through the study of Shamsazila Sa'aban et al. (2017) regarding the level of teacher evaluation of aspects of the implementation of the i-Think map program in schools in the Federal Territory of Kuala Lumpur. Although the involvement of teachers in i-Think programme activities such as courses, briefings and the establishment of implementation committees is at a high evaluation level, the application of i-Think skills in the learning and facilitation process in the classroom is only at a moderate level. With that, it is appropriate that this study be carried out to determine the level of knowledge and willingness of teachers to apply i-Think maps in the Malay Language learning and facilitation process.

The study conducted by Rohaida Yusop & Zamri Mahamod (2015) was carried out at a national school in Batu Pahat district. This study was conducted for eight weeks involving 60 students. The experimental student group consisted of 30 students, and the control group. This study aims to examine the effectiveness of the teacher's i-Think map during the learning and facilitation process to improve the Malay language writing achievement of year 6 students. The results of this study found that the use of the i-Think map in the teaching of essay writing successfully increased subject mastery in the aspect of essay preparation. Thus, this study concludes that the use of the i-Think map as a new way or method that can stimulate students to think at a higher level and subsequently make the learning and facilitation of the Malay language more interesting. In addition, Salina Md. Yunas & Zamri Mahamod (2017) also studied the level of readiness, attitudes and practices of primary school Malay teachers towards the use of mind maps. In the qualitative study, there are significant differences in the level of knowledge, attitudes and practices of teachers based on teaching experience. According to Salina Md. Yunas & Zamri Mahamod (2017), more experienced teachers are found to be more knowledgeable, with a more positive attitude and more often practice the i-Think map method. This is because experienced teachers are more aware of the advantages of using this method compared to novice teachers. The study of Noor Hidayu Mohd Rahim & Yahya Othman (2016) is about the effectiveness of using circle maps and flow maps in improving the mastery of narrative essay writing skills among Chinese students in a Chinese national type of school. This study uses a qualitative approach and quasi-experimental methods. This study was conducted on Chinese students among Year 5 students. 30 students were selected as the sample of the study for the experimental group, and 30 students were used as a sample for the control group. Through the learning and facilitation session, students in the experimental group were given treatment using circle maps and flow maps. Data were obtained from pre-and post-tests. The findings of this study proved that the use of circle map and flow map strategies in Malay Language learning and facilitation successfully increases the achievement of writing narrative essays among Chinese students from Chinese national type schools.

Meanwhile, Indira Sekaran (2017) also found that Orang Asli Year 5 students in Sarawak primary schools have experienced constraints in understanding, analysing and answering questions in the form of problem-solving. The situation improved after teaching based on thought maps was implemented in class. The study clearly shows that the experimental group's mean value ($m=39.42$) post-test is higher than the control group ($m=21.75$). Similarly, Abdul Rasid Jamian et al. (2017) successfully increased students' understanding of learning KOMSAS among Form Four students of Sekolah Menengah

Kebangsaan Seri Indah. The statistics show that the score in the post-test is higher than the score in the pre-test. The mean increase is 5.67. Studies conducted by past researchers have emphasised the use and importance of i-Think maps in the world of education. This has opened the researcher's mind to conduct a survey related to the level of knowledge and readiness of teachers towards the application of i-Think maps in Malay Language learning and facilitation process in primary schools. This study was conducted to achieve the following objective: to analyse the level of knowledge and readiness of teachers towards applying i-Think maps in the learning and facilitation process of the Malay language.

Methodologies

The design of this study is a descriptive quantitative study to identify and study empirically and systematically. The survey research focused on the level of knowledge and readiness of teachers towards the application of i-Think maps in the Malay language learning and facilitation process. The population for this study consists of 25 teachers who teach Malay subjects in eight primary schools in Hilir Perak district. Simple random sampling was conducted involving 24 teachers. This study involves measurement which is a process of determining the variable being studied. For this purpose, this study will use a questionnaire to collect research data. The questionnaire in this study will be divided into three parts, namely Part A, B and C. Part A covers five questions about the demographics of the study respondents, such as gender, age, teaching experience, qualification and specialization. Part B consists of 10 items related to the level of teacher knowledge regarding the application of i-Think maps in the Malay language learning and facilitation, and part C contains 10 items related to the level of teacher readiness for the application of i-Think maps in the Malay language learning and facilitation process. This questionnaire instrument uses a 5-point Likert scale which is 1 - strongly disagree, 2 - disagree, 3 - less agree, 4 - agree and 5 - strongly agree. The instrument is administered via Google Forms, and the link is given to selected schools in the Hilir Perak district's primary schools. The data was analysed using the Statistical Package for Social Science (SPSS) software version 28.0. Data analysis involves descriptive analysis, that is, by finding percentages, mean scores, and standard deviations.

Research Findings and Discussion

The findings of the study are based on research that has been conducted. Table 1 shows the demographics of the respondents involved in this study. The respondents in this study were a total of 24 teachers consisting of teachers who teach Malay subjects in the Lower Perak district. Table 1 below shows the demographic data of the respondents, which includes frequency and percentage, namely:

Table 1
Demography of Respondents

Demography	Aspects	Frequency (n)	Percentage (%)
Gender	Male	9	37
	Female	15	63
Age	21 – 30 years	8	33
	31 – 40 years	11	46
	41 – 50 years	3	13
	51 – 60 years	2	8
Teaching Experience	1 – 5 years	13	54
	6 – 10 years	8	33
	11 years and above	3	12
Qualification	Educational Diploma	0	0
	Bachelor's Degree	17	71
	Master's Degree	7	29
Specialization	Malay Language	18	75

Non-Malay Language

6

25

Based on Table 1, the study was conducted with a simple random sampling of 24 primary school teachers who teach Malay subjects in the Hilir Perak district. Based on Table 1, 9 (37%) respondents are male teachers, while 15 (63%) are female teachers. A total of 8 (33%) respondents ranged in age from 21 to 30 years old. The age group of 31 to 40 years recorded the highest number, which is 11 (46%). 3 (13%) respondents are between the ages of 41 and 50 years, and 2 (8%) respondents are between the ages of 51 to 60 years. Next, teaching experience from 1 to 5 years recorded the highest number, namely 13 (54%). 8 (33%) respondents have teaching experience between 6 to 10 years, and 3 (12%) respondents have teaching experience of more than 11 years. In addition, none of the respondents had an educational diploma. 17 (71%) consisted of respondents with a bachelor's degree, while 7 (29%) were respondents with a master's degree. Regarding specialization, 18 (75%) respondents are Malay language option teachers, while the other 6 (25%) are non-Malay language option teachers. Table 2 shows finding 1 for the teacher's knowledge item on applying i-Think maps in Malay language learning and facilitation. Based on Table 2 below, the level of teacher knowledge is high, with a mean score of 3.42.

Table 2*Findings of Teacher Knowledge Items*

Item	Mean	Standard Deviation	Level
Teachers' Knowledge	3.423	.439	Moderate

The interpretation of the findings of this study is determined based on descriptive statistics findings that have been developed by Mohd Asri Harun et al. (2016). The following table 3 shows the interpretation of the mean score:

Table 3*Interpretation of Mean Score (Mohd Asri Harun et al., 2016)*

Mean Range	Level	Interpretation
1.00 – 2.33	Low	Less Agree
2.34 – 3.67	Moderate	Agree
3.68 – 5.00	High	Strongly Agree

Table 3 shows the interpretation of the mean score based on Mohd Asri Harun et al. (2016). The mean range between 1.00 to 2.33 shows a low level, the mean range between 2.34 to 3.67 shows a moderate level, while the mean between 3.68 to 5.00 symbolises a high level where respondents strongly agree with the item. Table 4 below is an item analysis of the teacher's level of knowledge regarding the application of i-Think maps in Malay Language learning and facilitation:

Table 4

Item Analysis for the Level of Teacher Knowledge of Mind Map Application in Malay Language Learning and Facilitation

Item	Mean (μ)	Standard Deviation (S.D)	Level
I know effective questioning techniques in learning and facilitation using i-Think maps.	3.31	.585	Moderate
I know the cognitive level in the i-Think map.	3.38	.549	Moderate
I know the issues with i-Think maps.	3.40	.492	Moderate
I know the general characteristics of i-Think maps.	3.41	.495	Moderate
I know effective pedagogical practices through i-Think maps.	3.41	.536	Moderate
I know how to identify the function of an i-Think map.	3.44	.499	Moderate
I know how to identify the uses of each i-Think map.	3.44	.499	Moderate
I know the types of i-Think maps used in the learning and facilitation process.	3.46	.501	Moderate
I know the concept of an i-Think map.	3.47	.502	Moderate
I know the importance of applying i-Think maps in PdPc.	3.51	.503	High
Overall Mean		3.423	

The analysis of Table 4 shows that primary school teachers in Hilir Perak who teach Malay subjects have a moderate level of mastery in terms of knowledge in applying i-Think maps. The findings of the study show that the overall mean level of Malay teachers' knowledge of the application of i-Think maps is ($\mu= 3.423$). This happens due to the teacher's lack of knowledge about using i-Think maps, such as effective questioning technique which is compatible with i-Think maps to stimulate students' thinking toward more creative and critical thinking. In addition, teachers are also seen to lack exposure to the cognitive level based on i-Think maps, which causes teachers to face constraints in choosing i-Think map that is appropriate for learning and facilitation activities.

The findings of this study align with the study of Linawati Adiman & Sharifah Nor Puteh (2017). Where their study found that some teachers did not fully master the eight mind maps even though the teachers had been given initial exposure during the in-service training period and workshops related to the use of mind maps. Teachers are seen not to practice this method to facilitate their teaching. In fact, the respondents of this study are also teachers in the city who should be more forward than teachers outside the city in the application of the i-Think map. Next, Table 5 shows finding 2 for the teacher's readiness item for the application of mind maps in Malay language learning and facilitation. Based on Table 5 below, the level of teacher readiness is moderate, with a mean score of 3.408.

Table 5

Teacher Readiness Item Findings

Item	Mean	Standard Deviation	Level
Teacher Readiness	3.408	.403	Moderate

The following Table 6 is an item analysis of the teacher's level of readiness towards the application of thought maps in Malay Language learning and facilitation:

Table 6

Item Analysis for the Level of Teacher Readiness for the Application of Mind Maps in the Malay Language Learning and Facilitation

Item	Mean (μ)	Standard Deviation (S.D)	Level
I carry out learning and facilitation activities by relating mind maps.	3.32	.531	Moderate
I provide various questioning techniques based on i-Think maps.	3.36	.482	Moderate
I design teaching methods that promote higher-order thinking skills.	3.38	.530	Moderate
I encourage students to reason to promote the development of the mind based on the i-Think map.	3.39	.490	Moderate
I prepared the questions according to the ranking based on the i-Think map.	3.41	.495	Moderate
I encourage students to argue to promote the development of the mind based on the i-Think map.	3.41	.495	Moderate
I made a reflection for the improvement of learning and facilitation based on the i-Think map.	3.41	.495	Moderate
I prepare questions that students reflect on based on the i-Think map.	3.46	.501	Moderate
I encourage students to explore various information during learning and facilitation based on the i-Think map.	3.47	.502	Moderate
I identify the level of student knowledge in the implementation of i-Think maps.	3.47	.523	Moderate
Overall Mean		3.408	

The analysis results of Table 6 show that the mean level of readiness of Malay teachers towards the application of i-Think maps is ($\mu=3.40$). This shows that primary school teachers in the Hilir Perak district who teach Malay subjects have a moderate level of readiness toward the application of i-Think maps. They are aware of the importance of the i-Think programme. They are ready to improve the quality of teaching by using the i-Think map as a facilitator in their learning and facilitation process. Some of the teachers were exposed to i-Think maps through workshops to strengthen the use of i-Think maps. However, there are also a number of teachers who are still not ready and do not apply this i-Think map in their learning and facilitation process due to certain constraints, such as the environment and the current situation. Readiness is defined as practicing something learned and known with sincerity and doing it correctly and perfectly (Mohd Muhsinul Nidzam Abdullah, 2006). This finding is in line with the findings of a study conducted by Nor Hasmaliza Hasan & Zamri Mahamod (2016), who found that more than 60% of teachers practice thinking skills. Teachers were found still to apply i-Think maps in the learning and facilitation process to increase student learning knowledge, even though the level of teacher practice is at a moderate level. This happens because the knowledge level about using i-Think maps is also moderate. Teachers need to master the level of practice in using methods because teachers play a

role in educating an individual to become better and give evaluations to students (Aniza Ahmad & Zamri Mahamod, 2015).

Nevertheless, the findings of this study contradict other studies, such as studies conducted by Salina Md Yunas & Zamri Mahamod (2017) and Fadilla Layang & Zamri Mahamod (2019) which show that the level of readiness of Malay teachers towards the use of i-Think maps is at a high level. This may be due to teachers' lack of knowledge on how to apply i-Think maps. This point is proven by items 7 and 8, where the teacher uses i-Think maps less to stimulate students' critical thinking skills, such as encouraging students to reflect and argue based on i-Think maps. This can be avoided by the efforts of the teacher himself, such as collaborating with other colleagues to prepare teaching aids that use i-Think maps and diversify teaching methods. So, from there, teachers can exchange views and opinions on applying i-Think maps according to their teaching style.

Based on the discussion, it can be concluded that the results of this study show that the teachers as respondents have a moderate level of readiness in applying i-Think maps in the Malay Language learning and facilitation process. i-Think maps are seen to be very helpful to teachers in improving learning and facilitation strategies to achieve objectives and can further stimulate students' minds to be creative and critical. This study provides practical insights and theoretical implications for teachers' motivation to increase the use of i-Think maps in Malay Language learning and facilitation. From the aspect of knowledge implications, Kleickmann et al. (2021) explained that teachers' knowledge about content, pedagogy and teaching materials greatly influence the effectiveness of learning and facilitation in the classroom. This study also gives practical implications to teachers; that is, teachers should always prepare themselves in terms of knowledge and the spirit of wanting to change the nation's children to produce people who are able to face the challenges of the future by thinking creatively and critically. Empirical implications show that the use of i-Think maps affects the effectiveness of teachers' teaching, mastery of knowledge and teachers' willingness to use i-Think maps.

In relation to that, this study provides recommendations to those directly involved in educational organizations. Among the suggestions given to the Malaysian Ministry of Education is to hold various programmes such as the presentation of working papers as well as introducing appropriate applications so that teachers can increase the level of application of i-Think maps to give teachers awareness of the importance of the application of i-Think maps in learning and facilitation process, especially in Malay language subjects. In addition, the Institute of Teacher Education Malaysia needs to empower courses that emphasise the application of HOTS elements in the learning and facilitation process. The functions of i-Think maps should be emphasised so less experienced teachers can be exposed in more detail on how to apply HOTS elements through the use of i-Think maps, especially when trainee teachers undergo practicum phase 1 and phase 2. This is in line with the statement of the W.K Kellogg Foundation (2016). that is, a teacher's ability to master from the aspect of knowledge, the willingness to implement skills in patterning the thinking style affects the thinking skills among the students and further guarantees the effectiveness in the teaching process.

Next, the State Department of Education (JPN) has the role of conducting periodic monitoring of schools to review the effectiveness of the learning and facilitation process of Malay language teachers. If teachers do not diversify teaching techniques, JPN can encourage teachers to use i-Think maps as one of the many ways to improve students' thinking skills while attracting students' interest in learning. The recommendation to teachers is to practice the Professional Learning Community (PLC), which is to collaborate between teachers in the application of i-Think maps so that they can share knowledge and prove its effectiveness in the learning and facilitation process, especially in Malay subjects. In regard to this, teachers can also apply i-Think maps through the use of ICT by using PowerPoint software to make it easier for students to present their work. The school needs to provide various facilities to teachers to enable them to prepare various teaching aids, including i-Think maps. Finally, for further research proposals, research can be done within the scope of the same field but using a qualitative approach.

Pemecky (2016) has stated that the qualitative approach is an approach that allows a deep understanding of a phenomenon, situation or event. This proposal for further research can enable future researchers to carry out more empirical and quality research. The research findings that will be obtained are also able to improve the quality of the implementation and application of i-Think maps in the Malay Language learning and facilitation at the primary school level.

Conclusion

This study was conducted to assess the level of knowledge and readiness of teachers towards the application of i-Think maps in the learning and facilitation process of Malay language subjects. In conclusion, the results of this study show that teachers have knowledge and readiness at a moderate level in the application of i-Think maps. Teachers should be given sufficient exposure, especially in terms of the effective use of i-Think maps to generate students' critical thinking. This is so because i-Think maps are seen to be very helpful for teachers in diversifying learning and facilitation strategies to achieve objectives and subsequently can stimulate students' minds to always be creative and critical. The findings obtained through this survey successfully achieved the objectives that had been set and successfully answered the research questions. The application of i-Think maps is very relevant and needs to be integrated into learning and facilitation process that emphasises 21st Century Learning (PAK21). The application of i-Think maps in the learning and facilitation process can increase students' motivation to learn in addition to encouraging students' active involvement in learning. Therefore, the discussion of this study is expected to help various parties in realising the importance of applying i-Think maps in the learning and facilitation process in schools and subsequently taking appropriate action to increase the use of i-Think maps in Malaysian schools, including in rural schools in order to stimulate students' thinking skills once to put the country's education system in the best position.

Appreciation

I would like to express my most profound appreciation and gratitude to the Ministry of Higher Education (MoHE) for giving me the opportunity to continue my education. Not forgetting my beloved parents, dedicated lecturers, and kind friends for being the backbone and driving force throughout this research.

References

- Abdul Rasid Jamian, Martini Misdon, & Azhar Md Sabil. (2017). Penggunaan peta pemikiran i-Think dalam pemahaman KOMSAS Bahasa Melayu. *Jurnal Pendidikan Malaysia*, 42 (1), 51-59.
- Aniza Ahmad, & Zamri Mahamod. (2015). Tahap kemahiran guru bahasa Melayu sekolah menengah dalam melaksanakan pentaksiran berasaskan sekolah berdasarkan jantina, opsyen dan tempat mengajar. *Jurnal Pendidikan Bahasa Melayu*, 5, 18-29.
- Anuar Ahmad, & Jingga, N. (2015). Pengaruh kompetensi kemahiran guru dalam pengajaran terhadap pencapaian akademik pelajar dalam mata pelajaran Sejarah. *Jurnal Kurikulum dan Pengajaran Asia Pasifik*, 3(2), 1-11.
- Bahagian Pembangunan Kurikulum Kementerian Pelajaran Malaysia. (2012). *Draf program i-THINK: Membudayakan Kemahiran Berfikir*. <http://www.moe.gov.my/bpk>
- Fadilla Layang, & Zamri Mahamod. (2019). Tahap pengetahuan, kesediaan dan sikap guru Bahasa Melayu sekolah rendah dalam melaksanakan pengajaran dan pembelajaran Peta Pemikiran i-Think. *Jurnal Pendidikan Malaysia*, 44(1), 37-44.
- Indira Sekaran. (2017). *Kesan penggunaan peta pemikiran dalam pengajaran pecahan terhadap kemahiran berfikir aras tinggi murid orang Asli tahun 5 (IR)*. [Disertasi sarjana yang tidak diterbitkan]. Universiti Pendidikan Sultan Idris.
- Linawati Adiman & Sharifah Nor Puteh. (2017). Pelaksanaan peta pemikiran I-Think dalam kalangan guru, Fakulti Pendidikan, Universiti Kebangsaan Malaysia. [https://seminarserantau2017.files.wordpress.com/2017/09/58-linawati-lina adiman.pdf](https://seminarserantau2017.files.wordpress.com/2017/09/58-linawati-lina%20adiman.pdf)
- Mohd Muhsinul Nidzam Abdullah. (2006). *Prinsip-prinsip dan amalan guru dalam pengajaran pendidikan akidah sekolah rendah*. [Disertasi sarjana yang tidak diterbitkan]. Fakulti Pendidikan, Universiti Kebangsaan Malaysia.
- Nor Hasmaliza Hasan, & Zamri Mahamod. (2016). Persepsi guru bahasa Melayu sekolah menengah terhadap kemahiran berfikir aras tinggi. *Jurnal Pendidikan Bahasa Melayu*, 6(2), 78-90.
- Noor Hidayu Mohd Rahim, & Yahya Othman. (2016). Keberkesanan peta bulatan dan peta alir dalam meningkatkan penguasaan menulis karangan naratif murid-murid Cina. *Jurnal Pendidikan Bahasa Melayu (MyLEJ)*, 6(2), 68-77.
- Kementerian Pelajaran Malaysia. (2012). *Program i-think membudayakan kemahiran berfikir*. Bahagian Pembangunan Kurikulum.
- Kleickmann et al. (2021). *Pelaksanaan Peta Pemikiran i-Think dalam kalangan guru*. Penerbit Universiti Kebangsaan Malaysia.
- Ong, S.Z, Zamri Mahamod, & Mohd Izham Mohd Hamzah. (2017). Meneroka kaedah pengajaran guru cemerlang bahasa Melayu negeri Sarawak: Satu kajian kes. *Jurnal Pendidikan Bahasa Melayu*, 7(1), 93-108.

- Pemecky, T. (2016). *Kepentingan penyebatian kemahiran berfikir secara kritis dan kreatif (KBKK) dalam proses pengajaran dan pembelajaran*. Penerbit Universiti Kebangsaan Malaysia.
- Rohaida Yusop, & Zamri Mahamod. (2015). Keberkesanan peta pemikiran dalam meningkatkan pencapaian penulisan bahasa Melayu murid tahun 6. *Jurnal Pendidikan Bahasa Melayu*, 5(2), 31-37.
- Roselizam Daud, Roslan Ab Rahman, & Noradilah Abdul Wahab. (2018). Sikap dan tingkah laku guru terhadap penggunaan peta pemikiran I-Think dalam proses pengajaran Pendidikan Islam di sekolah. *Asian People Journal*, 3(2), 24-35.
- Rubananthan Paramasveran & Nurfaradilla Mohamad Nasri. (2018). Keberkesanan Peta Pemikiran I-think dalam meningkatkan kemahiran berfikir aras tinggi (KBAT). *International Social Science and Humanities Journal*, 3(1), 64-78.
- Saavedra, A. R., & Opfer, V. D. (2012). Learning 21st-Century skills requires 21st-century teaching. *Phi Delta Kappan*, 94(2), 8-13. <https://doi.org/10.1177/003172171209400203> Tahap kesediaan, sikap dan amalan guru bahasa Melayu sekolah rendah terhadap penggunaan peta pemikiran I-Think. *Prosiding Seminar Pendidikan Serantau ke-VIII, 2017*, 767-774.
- Shamsazila Sa'aban, Muhammad Faizal Abdul Ghani, & Ghazali Darusalam. (2017). Pelaksanaan program i-Think di sekolah Wilayah Persekutuan Kuala Lumpur: Satu kajian awal. *Jurnal Kepimpinan Pendidikan*, 4(1), 72-90.
- Sharifah Nor Puteh, & Aliza Ali. (2012). Persepsi guru terhadap penggunaan kurikulum berasaskan bermain bagi aspek perkembangan bahasa dan literasi murid prasekolah. *Jurnal Pendidikan Bahasa Melayu*, 2(1), 141-159.
- The Organisation for Economic Co-operation and Development (OECD). (2012). *2012 annual report on the OECD guidelines for multinational enterprises*. <https://www.oecd.org/corporate/mne/2012annualreportontheguidelinesformnes.htm>